

Predictors of physical functioning after primary uncemented Total Hip Arthroplasty.

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Background

A total hip arthroplasty (THA) is known as a successful intervention. Most patients experience pain relief, function regain and an improved quality of life after a THA. However, not all patients reach the same level of physical functioning after a THA. About 30% of these patients report limitations in physical functioning, two years after surgery.¹ Yet, it is still unclear which factors are associated with physical functioning.^{2, 3}

Aim

To investigate whether the, in literature, reported variables are also of predicting value in the uncemented THA population of OLVG hospital, one year after surgery.

Methods

Systematic Review⁴



- Web of Science, CINAHL, EMBASE and PubMed
- Selection based on quality, relevance and measurement of the predictive factor.
- Level of evidence – GRADE

Prediction model



- Variables selected: based on our review + other literature^{5, 6}
- Variables are tested in a database of a hip arthroplasty RCT⁷
- Tested variables:
 - Age; gender; Body Mass Index (BMI)
 - Pulmonary and cardiac comorbidity
 - Degree of osteoarthritis (OA) (Kellgren & Lawrence score)
 - Pain in the affected hip, in the contra-lateral hip, in the knee and in the back
 - Hip disability and Osteoarthritis Outcome Score physical function short form (HOOS-PS)
 - mental health (SF-12 MCS)
- All variables were measured pre-operative.

Statistics:



- Prediction model:
 - Regression analysis with backward selection

Outcome:



- Physical functioning, 1 year postoperative, measured with the HOOS-PS.

Results

Systematic review



Associations with physical functioning after THA:

- **Strong evidence**
BMI, age, comorbidity, preoperative physical functions and mental health
- **Weak evidence**
Quadriceps strength and education
- **Inconsistent evidence**
Gender and socioeconomic status
- **Limited evidence**
Alcohol consumption, vitamin D insufficiency and allergies

Prediction model

- All, in literature, found variables were tested by making a prediction model
- This has resulted in three predictors:
 - pulmonary comorbidity ($p=.091$)
 - pre-operative physical functioning ($p<.000$)
 - mental health ($p=.152$)



Conclusion

Based on both literature and our prediction model, **pulmonary comorbidity**, **pre-operative physical functioning** and **mental health** are identified as predictors of physical functioning 1 year after a THA.

→ This can be very useful information for patients considering a THA.

References

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